Application No.: 09/923,279
New Attorney Docket No.: 09423.0046-01000

IN THE CLAIMS:

1. [A radiating device for urethral hyperthermia including a catheter provided at its distal end with an inflatable balloon (7) and adapted to receive multiple injected liquid flows (2,5,8) passing therethrough, a radiofrequency radiating antenna (1) and multiple thermocouples (6,6', 6"), the radiating antenna being submerged within said liquid flow, characterized in that

said radiating antenna (1) is submerged within a liquid flow which proceeds through a central channel (2) surrounding said radiating antenna (1) towards the distal end of said catheter and passes from said catheter through a first opening (3) into the bladder to be treated, while flowing back into said catheter towards the proximal end thereof through a second separate opening (4) of a side channel (5) surrounding the power supply cables of said thermocouples (6,6', 6"),

the ends of said thermocouples (6,6', 6") project out of said second opening (4), being thus deflected outwards into the bladder when said balloon (7) is inflated by injecting a fluid therein through a second side channel (8) and third opening (9), whereby the outwardly deflected ends of said thermocouples (6,6', 6") come into tangential engagement with the bladder wall (32) irradiated by said antenna (1).]

2. (New) A radiating device for irradiating a cavity comprising:

a catheter;

an antenna, situated at a distal portion of the catheter, for irradiating the cavity;

a central channel adapted to provide a fluid to the cavity;

a side channel adapted to receive the fluid from the cavity;

at least one side branch, situated at a proximal portion of the catheter; and

at least one temperature sensing device, having an end, the end of the at least one temperature sensing device extending outward from the catheter after the catheter is inserted into the cavity;

wherein the end of the at least one temperature sensing device is adapted to detect a temperature of a wall of the cavity irradiated by the antenna.

3. (New) The radiating device according to claim 2 wherein the at least one side branch provides an inlet for the fluid to enter the central channel.

4. (New) The radiating device according to claim 2 wherein the at least one side branch provides an outlet for the fluid to exit from the side channel.

5. (New) The radiating device according to claim 2 further comprising:

an inflatable balloon situated at the distal portion of the catheter;

a second side channel adapted to provide a fluid used to inflate the inflatable balloon; and

a one-way valve for introducing the fluid used to inflate the inflatable balloon to the second side channel.

6. (New) The radiating device according to claim 5 wherein the fluid used to inflate the inflatable balloon is a liquid.

7. (New) The radiating device according to claim 5 wherein the fluid used to inflate the inflatable balloon is a gas.

8. (New) The radiating device according to claim 2 wherein the fluid comprises a conditioning liquid.

9. (New) The radiating device according to claim 2 wherein the fluid comprises a solution of a selective cytotoxicity substance.

10. (New) The radiating device according to claim 2 wherein the antenna comprises a linear dipole antenna.

11. (New) The radiating device according to claim 10 wherein the linear dipole antenna comprises a coil-shaped segment.

12. (New) The radiating device according to claim 2 further comprising a stainless steel wire coupled to the at least one temperature sensing device.

13. (New) A radiating device for hyperthermia including a catheter provided at its distal end with an inflatable balloon (7) and adapted to receive multiple injected liquid fluid flows (2,5,8) passing therethrough, a radiofrequency radiating antenna (1) and multiple thermocouples (6,6',6"), the radiating antenna being submerged within a fluid flow, characterized in that

said radiating antenna (1) is submerged within a flow which proceeds through a central channel (2) surrounding said radiating antenna (1) towards the distal end of said catheter and passes from said catheter through a first opening (3) into a bladder to be treated, while flowing back into said catheter towards the proximal end thereof through a second separate opening (4) of a side channel (5) surrounding the power supply cables of said thermocouples (6,6',6"),

the ends of said thermocouples (6,6',6") project out of said second opening (4), being thus deflected outwards into the bladder when said balloon (7) is inflated by injecting a fluid through a second side channel (8) and third opening (9), whereby the outwardly deflected ends of said thermocouples (6,6',6") come into tangential engagement with a bladder wall (32) irradiated by said antenna (1).